

Effect of Yoga on Adolescents' Attitude towards Violence

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Abstract

As society progresses with newer technology choices and greater materialistic welfare, we also witness more incidences of aggression and violence among the youth and adolescents. This is partly due to the mental stress that they undergo. There has been a renewed interest to understand the causes of aggression and violence. More importantly, there is an interest to identify methods to manage these. This article is an attempt to showcase the usefulness of yoga in addressing this aspect. The present study was conducted to find out the effect of 4 weeks' yoga practice on 158 (76 girls and 82 boys) normal healthy adolescents' attitude towards violence (ATV) in comparison to practice of physical exercises (PE). The study showed that both yoga and PE groups demonstrated significant reduction in their positive ATV strategies and increased positive use of non-violent strategies. Boys in the yoga group showed significant improvement, whereas the control group showed non-significant improvement. Girls in the yoga also displayed significant progress over the control group. Thus, the study points to the usefulness of introducing yoga to the adolescents in their formative years through a structured curriculum. This is likely to provide numerous benefits both for the individual and the society at large.

Keywords

Yoga, adolescents, violence, aggression, empirical study

Introduction

Violent behaviour is one of the negative and undesirable behaviours in adolescents. Being one's destructive way of expression and interaction with others, an adolescent might choose violent mode to indicate his desire or wish or way for solving interpersonal problems. During adolescence, an individual

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exhibits highest level of violence by flouting code of conduct and rules, disobedience, aggression and fighting. When they feel their safety is challenged, persona is affected owing to others actions, or their ideas or tastes are not appreciated, they exhibit aggressiveness in their efforts to protect themselves or their interests or ideas. Such aggressive or violent adolescents face rejection by their social groups owing to powerful cultural and social sanctions, hence aggressive tendency is always considered socially unacceptable.

Being considered as a major global health problem which is neither country-specific nor religion-specific, causing concern is unrestrained aggression or violence could lead to substantial toll on our societies, affecting both the delinquent and the one who is uninvolved. The seriousness could be understood from the fact that violence is the second foremost cause of death for youth in USA (Deshpande, Nagendra & Raghuram, 2008). Some studies suggest that 10–15 per cent of children are aggressive or violent in Western countries, which is more or less comparable in other countries as well (Olweus & Limber, 2010), as aggression- or violence-related conducts in adolescents are extraordinarily similar all over the world.

Men in India are seven times more offenders than women, which is analogous to offences in demographics of other countries of the world as well. More than 66 per cent of juvenile violence in India is committed by adolescents (Mukherjee, Rustagi & Krishnaji, 2001) and elderly adolescents are more likely to be arrested and put behind bars than their younger counterparts (Kethineni & Klosky, 2000). Further, aggression and violent behaviour is considered to be mostly stable from childhood to adulthood which could lead to multitude of problems, such as juvenile delinquency, adolescent relational problems and adulthood criminal attitude; hence, it is essential to correct the adolescents' violent attitude at the earliest to avoid delinquency in the later age points.

The rest of the article is organized as follows. In the next section, we introduce the notion of violence, forms of violence and the role of yoga in addressing them. In the following section, we present the details of the study conducted followed by a section that discusses the results, their usefulness and implications for practice. Finally, we conclude the article by pointing to certain areas that require further study on this issue.

Violence and Role of 'Yoga' in Addressing Violence

Before we dwell into the main aspects of the study findings, it is imperative to define some key terms. These definitions clarify the study's scope with respect to violence, its causes and impact. Violence is 'intentional or deliberate use of bodily power against others, which can result in (or high chance of resulting in) harm, death, mal-developments or deprivation' (WHO). It is the conduct engaged towards another individual or against a group or community, with the sole intention of initiating damage, injury or harm. 'Attitude' presupposes actions and is person's preparedness to act or react in a particular/specific mode.

'Aggression' is the resentment expression resulting in violence or hostility; or preparedness to attack or confront. 'Violent attitude' is hidden or latent discernment variable towards violence, that is guided by one's own assessment systems. Aggression or violent action carried out is dependent on one's violent attitude. Thus, violent attitude can be a good predictor of one's aggression/violence level.

Violence is treated as intense form of physical aggression that is likely to end up in physical injury; and in extreme form it could lead to homicide as well. Human being, the most intelligent creature, is the only species on this earth that can resort to mass massacre driven by his own violent attitude. Thus, he can be (and is) highly disruptive. Various ways in which violence is expressed or gets manifested in man are the

basis for its classification. Accordingly, it could be physical, verbal or covert. Physical violence could lead to physical injuries to others. Verbal aggression is preference to attack others self-concept, thus includes threatening warnings, use of disruptive, abusive words and verbal expression of animosity. Covert or concealed aggression is instigating others to attack, without one's express involvement in aggression.

Indian yogic scriptures proclaim that yoga is a way to explore external and internal realms, finally to attain ultimate knowledge. Herein, the Indian yogis equated yoga with a way of living to be in tune with 'Supreme Reality'. They preached that yoga is both for internal bliss and external coherence, with an objective of unifying body, mind and emotions. Addressing violent behaviour through yoga, which has its roots in Indian scriptures, is suggested by many researchers on the grounds that it is very effective and could be documented to promote research on violent attitudes and applications of yoga.

If violent attitude is one's latent perception to be violent, it can be reversed only through non-violent (peaceful) mechanisms, such as yoga. If violent attitude is uncontrolled speed or arousal, aimed at instant intention of initiating harm to others, yoga is the art of slowing down, to remain equipoise in all conditions. Yoga has diverse constituents, such as guided relaxation, physical postures (*yogasanas*), regulated breathing (*pranayama*), meditation and sermons on philosophy of yoga (Nagendra, 2000). The ultimate aim of yoga is perfection of the personality of its practitioner so that he could stay equipoise in every circumstance. *Yogasanas* are methodical physical movements, synchronized with slow breathing to give exercises to various organs, systems and tissues and provide them an avenue to deal with character, attitudes and tensions that can bring about healthy changes in several psychopathological aspects. When yoga-induced non-violence in speech, thought and action is established, one's violent nature is relinquished and even violent persons abandon their hostility in such a yogi's presence (Iyengar, 1993).

Yoga is growing in popularity in many countries. But sometimes yoga is confused and equated with physical exercises (PE). However, the comparative roles of PE and yoga are yet to be understood in respect of their effects on attitude towards violence (ATV) in adolescents, beliefs about aggression and alternatives, normative beliefs about violence. The present study seeks to fill this gap by systematically studying the effect of integrated yoga module on adolescents' ATV in comparison to PE.

Details of the Empirical Study

Research Design

Since the study was directed towards finding effect of yoga on ATV of adolescents, children in 12–16 years of age group were considered for the study. Two schools, namely, 'Lords' and *Samarthanam*, located in south Bangalore were selected. These schools were approximately identical in respect to financial status of parents, standard of education and medium of instruction. In both the schools, English and Kannada languages were taught as medium of instruction. Both the school managements had confirmed that this kind of yoga programmes was never conducted in their schools previously. The consent was obtained from managements of two schools to conduct the present research with a condition that the data collected from students would not be published in any kind of media, by mentioning names of the students.

The adolescents were exposed to an introductory lecture, along with parents and school teachers. The students were given the choice of not participating in the study and of not answering the questionnaire. They were also given choice to quit the study at any point of time without assigning reasons. The adolescents who took part in the current study expressed their approval by signing 'Informed Consent' which was provided in English or Kannada as per their choice. Parents also signed 'consent forms',

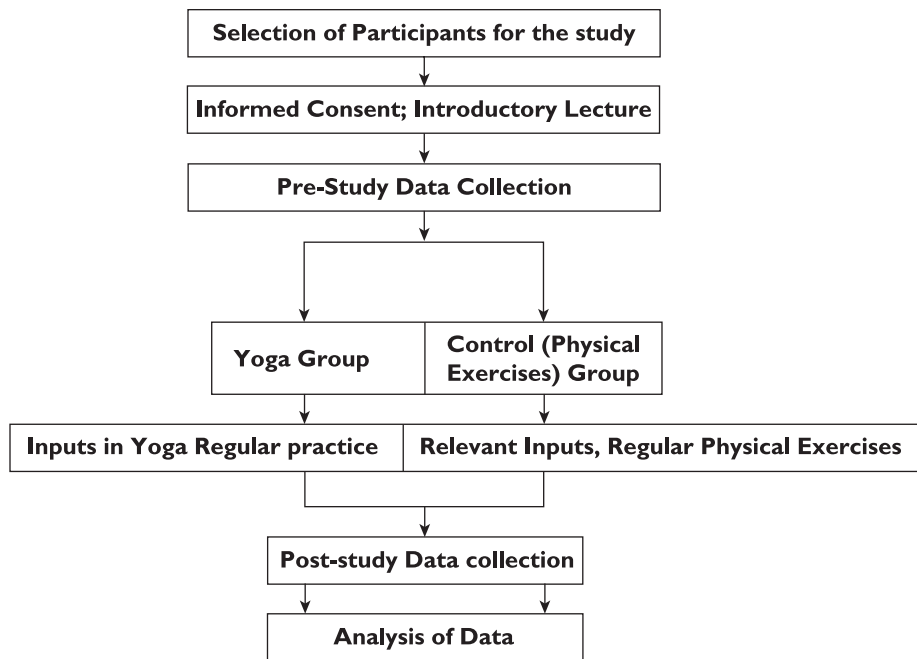


Figure 1. Pictorial Representation of Study Details

Source: Authors' own.

agreeing for their children's participation. Both the school managements agreed for the study. Further, Institutional Ethical Committee of SVYASA (parent Institution) had also cleared the project. Figure 1 shows a pictorial representation of the study plan.

Totally, 180 students (88 girls and 92 boys) satisfied inclusion and exclusion criteria and agreed to be in allotted groups (Yoga/PE). The inclusion criteria were healthy adolescents of both genders and ability to read and write both the languages namely, English and Kannada (local language). The exclusion criteria were chronic illnesses, anxiety disorders, depression and substance abuse, such as nicotine, intoxicant drinks and drugs. Besides student's own confirmation, this was again checked with school teachers and concerned parents.

ATV scale (English or Kannada as per adolescents' choice) was administered on the first day (before start of yoga/PE) and on the last day (after the practice of yoga/PE) in a single sitting, in the presence of a psychologist, who had no roles in grouping of participants or in the conduct of sessions. He was totally an outsider from the point of schools. During administration of scale, adolescents were made to sit silently and it was ensured that they were free from diversions and influences of one over the other, by having no interaction or discussion. Two supervisors fluent in English and Kannada languages were moving around and clarifying adolescents' doubts.

After the pre-data collection, 180 adolescents were randomly allocated to yoga and control groups (90 + 90). The yoga group practiced integrated yoga module for 4 weeks (for 1 hour a day, for 5 days a week) taught by qualified yoga professionals, who were proficient in both the languages (English and Kannada). The integrated yoga module (Table 1) used in this study was designed based on the ancient Indian yoga scriptures, and the same has been used in previous studies on yoga for promotion of positive health.

Table 1. Yoga Module Coverage

Category	Details
Yogasanas	<p>Supine postures: Pavanamuktasana, Paryankasana, Sethubandhasana, Dhanurasana, Chakrasana.</p> <p>Prone postures: Bhujangasana, Shalabhasana, Naukasana.</p> <p>Sitting postures: Janushirasana, Vakrasana, Vajrasana, Ushtrasana, Shashankasana, Padmasana.</p> <p>Standing postures: Trikonasana, Prasara Padottasana, Parshva-konasana, Ardhakaticakrasana.</p> <p>Balancing postures: Vrikshasana, Utthita Padmasana, Shirasasana.</p>
Pranayama	Cleansing techniques, breathing techniques, yogic breathing.
'Way of life' aspects	Yogic diet, meditation, prayer gatherings, yogic life style in the light of yoga scriptures, such as <i>Patanjali yoga sutras</i> and <i>Bhagavad Gita</i> .
Others	<i>Suryanamaskara</i> , yogic relaxation.

Source: Authors' own.

This module has been found to be useful for all round personality development of the practitioners—at corporeal level, mental level, emotional level, spiritual level and for their social ability. The topics mentioned in the table may appear to be exhaustive, given the duration of the programme. However, it must be mentioned that there were variable depth of coverage. All the *asanas* mentioned in the tables were covered, albeit in different combinations on different dates. Compared to the *asanas* and meditation, the coverage on yogic way of life was minimal. For instance, meditation was taught for 3 days and the tips on yogic diet were taught on 1 day.

The control group practiced moderate PE for the same period simultaneously in different floors of the same premises. Physical exercises module was developed by professionals and was taught to the participants by trained teachers. The PE selected in this study was aimed at moderate exercise of various parts of the body, loosening of joints, muscles, besides, PowerPoint presentation on healthy lifestyle according to modern medical science, importance of balanced diet, ill-effects of drug abuse, alcoholism, injurious effects of smoking, modern stressful life, effects of sedentary lifestyle, obesity and related ailments, remedial measures through PE. Unguided relaxation was taught for 5 minutes every day.

By the end of study period, there was participant attrition to the extent of 22 adolescents (12.22 per cent) and reason was attributed to inter-school sports meet. At the end of 4 weeks, complete data were available for 158 adolescents (76 yoga, 82 control; boys 82, girls 76; 89 seventh, 69 eighth grades) in the age groups: 12 years (13), 13 years (39), 14 years (36), 15 years (69), 16 years (1). Both the pre- and post-intervention questionnaires administered and collected were marked suitably by the psychologist and preserved for future analysis. Access to these materials was limited only to the psychologist and the researchers of the present study.

Measurement Scale for Attitude towards Violence

Since the purpose of this study is to understand the effect of yoga on aggression and violence, it was decided to make use of an appropriate instrument for measurement. This study uses the ATV scale originally designed by Houston Community demonstration project (1993) and later adapted by Bosworth

and Espelage (1995). The scale has an internal consistency of 0.67. Targeted at middle school children in the grades 6–8, the scale evaluates adolescents' ATV and its acceptability or otherwise and assesses their extent of use of non-violent strategies as alternatives to violent strategies. Details of the scale are available in Appendix 1.

The process involves translation of adolescents' subjective perceptions towards violence into numerical objectivity so that the output is analyzed mathematically. The respondents are asked to indicate the extent to which they agree/disagree with different statements using a Likert type of scale. The score for six items in scale range from strongly disagree (1) to strongly agree (5). Items two and five are reverse coded. Therefore, the score ranges from 6 to 30. Higher scores indicate positive ATV strategies and limited use of non-violent strategies and vice versa.

Results and Implications

The data collected from the study were suitably coded and statistically analyzed using SPSS 21.0. It was preferred to assess normality visually as well as through Shapiro–Wilk test provided by SPSS. The data have Cronbach's alpha of 0.766 which shows good internal consistency of scale items. Data are normally distributed (Shapiro–Wilk (Sig) 0.051) and hence parametric test is conducted.

The results (Table 2) show that the impact of yoga in influencing ATV is most pronounced during the age group of 12–14 years. As the adolescents grow up, they tend to be relatively less influenced. This is partly because of the formative years in their schooling. The results, though based on a single intervention, point to the usefulness of teaching yoga at formative years of a child. Equipped with this knowledge and yoga practice, they may be in a better position to handle the stress that they are likely to face as they grow up.

Table 3 has salient aspects of the paired *t*-test. The results are also tabulated with respect to the gender. Paired sample *t*-test at the overall level shows a significant change in both yoga and control groups, $F(1, 158) = 0.000$ ($p < 0.05$) in self-reported ATV, pre- and post-intervention. But the mean change in the yoga group is 39.59 per cent, as against 7.51 per cent in the case of control group, demonstrating significant improvement in the yoga group. On the other hand, though there is an improvement, it is not significant in the control group. Thus, yoga could be a powerful intervention to reverse the adolescent's ATV compared to PE, and the outcome is comparable to several previous studies.

In boys, the yoga group showed significant improvement $F(1, 39) = 0.000$ ($p < 0.05$), whereas in the control group, it was non-significant $F(1, 43) = 0.507$ ($p > 0.05$). In girls, both yoga and control groups

Table 2. ATV: Impact of Respondents' Age

Age (Years)	Frequency	Pre (Mean)	Post (Mean)	Pre–Post (Mean)	% Mean Difference	Sig (Two-tailed)
12	13	22.62	16.69	5.93	22.22	0.000
13	38	21.45	16.68	4.77	22.24	0.000
14	37	19.81	14.76	5.05	25.49	0.000
15	69	18.67	15.33	3.34	17.89	0.000
16	1	22.00	23.00	– 1.00	– 4.55	NA
158						

Source: Primary data collected by authors.

Table 3. Details of Paired t-test Results

		Cronbach's Alpha 0.766			
		Normality Tests:			
		Kolmogorov–Smirnov (Sig) 0.030			
		Shapiro–Wilk (Sig) 0.051			
Groups	Measures		Overall	Male	Female
Yoga group	Pre	Mean	17.91	19.97	15.73
		SD	2.936	1.967	2.090
	Post	Mean	10.82	10.41	11.24
		SD	3.063	3.185	2.910
	Pre–Post (Mean)		7.09	9.56	4.49
	Percentage Mean Difference		39.59	47.87	28.54
	Sig (Two-tailed)		0.000	0.000	0.000
Control group (PE group)	Pre	Mean	21.84	22.91	20.67
		SD	3.218	2.827	3.247
	Post	Mean	20.20	22.56	17.59
		SD	3.320	1.968	2.436
	Pre–Post (Mean)		1.64	0.35	3.08
	Percentage Mean Difference		7.51	1.53	14.90
	Sig (Two-tailed)		0.000	0.507	0.000

Source: Primary data collected by authors.

displayed significant progress $F(1, 76) = 0.000$ ($p < 0.05$), but the mean change in the yoga group is 28.54 per cent; against 14.90 per cent in the control group. This again demonstrates that yoga brought about a significant change in the participants' decreased positive ATV strategies and increased positive use of non-violent strategies. This outcome also demonstrates that irrespective of gender, yoga can bring about positive changes in their ATV more than the PE does.

Discussion

Earlier studies have mixed patterns as far as the effect of yoga on ATV is concerned. In one of the randomized control trial, no significant changes were reported between groups (yoga/control) in self-reported positive effect, aggression indices, and global self-worth (Haden, Daly & Hagins, 2014). For children participating in the yoga group, negative effect (where 'hostility' is an item) augmented when compared to the control group which practiced PE. This finding suggested that yoga and PE curricula did not differentially impact on middle-school children's emotional and behavioural operative. However, most of the earlier scientific studies have demonstrated that yoga practice would reduce the ATV (Berger, Silver & Stein, 2009; Deshpande, Nagendra & Nagarathna, 2009; Frank, Bose & Schrobenauser-Clonan, 2014; Khemka, Hankey & Ramarao, 2011; Raghuraj & Telles, 1997; Ramadoss & Bose, 2010; Schell, Allolio & Schonecke, 1994). Thus, in consistent with these majority of the studies, the findings of present study show that intervention of yoga can reduce the adolescents' ATV significantly $F(1, 76) = 0.000$ ($p < 0.05$) as compared to PE.

Many studies reported that women are more empathy driven compared to men and men are found to be significantly violent, highly approving of violence, heated discussions, war, interest in penal code, political disputes, crime stories/news and support capital punishment (Anderson, et al., 2006). Hence,

in the present study, it was expected that boys would be more aggressive. The data analysis in the present study did support this view. In both yoga and control groups, boys were more aggressive. These gender-related variations in aggression level may simply reveal the factual phenomenon that girls and boys have different 'perceptions', 'styles' or 'strategies' of aggressive behaviour and may vary according to context. The instinct theory of aggression (notably Sigmund Freud) presupposes that there exists a 'sex instinct' which makes men more likely candidates than women to outbursts of anger, violence and aggression (Eron & Huesmann, 1994). Further, the theory of hormones and chromosomes, which became popular since 1920, says that excessive violent attitude in men is attributable to presence of extra 'Y' hormone and supporters of this theory opine that by increasing 'Y' hormone, a person's aggression/violent attitude can be increased.

Some research studies say that ATV is inversely related to age. The age brings about maturity and sensitive to the pains of others, and owing to this fundamental change in their attitude, adolescents increasingly become aware of their surroundings, with increase in age (Huesmann & Guerra, 1997). Accordingly, it was predicted in the present study that the violent attitude of adolescents would decrease as they get older. The pre-intervention mean scores of ATV (age wise) is 12 years (22.62), 13 years (21.45), 14 years (19.81) and 15 years (18.67), showing a gradual tapering as the age increases and thus the age of the adolescent is a good predictor of ATV. Even in case of post-intervention, this correlate with age mostly remains and ATV (age wise) is 12 years (16.69), 13 years (16.68), 14 years (14.76) and 15 years (15.33).

The present study demonstrated that 4 weeks' intervention of integrated yoga module on the yoga group and PE on the control group decreases positive ATV strategies and increases positive use of non-violent strategies. However, the significance of change in case of the yoga group is more than the PE group. If aggression and violent attitude is uncontrolled or unrestrained rapidity or speed or provocation, aimed at instant intent of initiating harm to others, yoga is the art of slowing down, to remain equipoise in all conditions, which can cause to increase the self-control and tolerance (*titiksha*, in the words of yoga). Owing to this slowing down, the person is more thoughtful about his own actions. Devotional sessions, spiritual discourse, *bhajans* (devotional songs) and recitation of *Vedic mantras* (which are all integral parts of yoga) have direct impact on person's emotions and make him more sensitive to happenings around and to the pain of others (Nagendra, 2000).

Improved self-control and emotional change make a person reciprocate with 'empathy', which is a derivative of sensitivity (to the pains/sufferings of others and to behave responsibly). Empathy and level of aggression are inversely related to each other (Anderson et al., 2010). *Yogasanas* are very methodical stretching physical movements, exercising various organs, systems, muscles, tissues and provide them a way to deal with character, attitudes and tensions and can bring about healthy changes in several psychopathological conditions, as body and mind are different facets of one's personality. Peaceful, harmonious society is the need of the hour and research works have to try for methods that can bring about strong and effective psychological changes, in order to achieve harmony with nature, with society (where we are integral parts), and finally among ourselves and yoga can do this (Ditmanson, Koller & Kupperman, 2002).

Implications for Practice

The study results point to certain implications and useful directions in terms of use of yoga in addressing the issue of aggression and violence. In an era characterized by increased competitive pressures from schooling right up to professional growth, individuals are expected to face more stress which can lead to

aggression and violent behaviours. As discussed earlier, introduction of yoga at the formative years will provide a significant helping hand in addressing the problem. Schooling system needs to recognize the importance of introduction of yoga and provide a structured mechanism to incorporate it into the curricula. Yoga lessons could be introduced at the third grade. A 5–6 year curricula with relevant inputs from yoga could be designed and progressively introduced.

Practice of yoga not only helps in addressing aggression, but also helps an individual to develop a more balanced view of life, empathy towards multiple actors and situations, an overall and a holistic perspective of life and a sense of preparedness to face difficulties in life. This results in developing healthy individuals in the society. The indirect effects of such a development include greater work productivity for the organizations these individuals are associated with in the future.

Addressing aggression-related ailments through yoga as proposed in this study is alternative to drug therapy. Drug therapy is normally associated with high costs and is known to produce various side effects. The present study strengthens the view that yoga could be a safe and cost-effective alternative for drug therapy to address violent attitudes of adolescents without side effects. Another important strength of the study is that, irrespective of sex, yoga intervention can bring about upbeat changes in the adolescents' ATV, more than the PE does. Hence, the study outcome is consistent with the Indian conventional yoga scriptures which did not make any gender discrimination for yoga practice.

Conclusions

The study has established the potential of yoga to address aggression and ATV among the adolescents. The sample size has been large enough providing a certain statistical stability to the results and the findings. There are certain limitations in the present study which could be overcome by conducting additional studies in the future. Use of Likert scale for soliciting responses is traditionally found to have certain limitations in terms of translating the respondents' specific perception to a point in the scale. Increasing the sample size, maintaining and ensuring privacy and protection of data, building anonymity into the data collection method are some of the known methods to minimize these. The present study has taken care of these issues. However, this can be further strengthened by gathering data on parent rating and teachers' rating. Further, the present study does not include other variables, such as income levels of the parents and racial/ethnic differences, which are considered to be the good predictors of violent attitude. Despite these limitations, the present study opens up the possibilities for future research.

Acknowledgements

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Appendix I. ATV Scale

Name of the Student: _____

Class _____

Age _____

Gender: M / F

How much do you agree or disagree with the following statements?

Items	5*	4	3	2	1
1 If I walk away from a fight, I'd be a coward ('chicken').					
2 I do not need to fight because there are other ways to deal with being mad.					
3 It is okay to hit someone who hits you first.					
4 If a kid teases me, I usually cannot get him/her to stop unless I hit him/her.					
5 If I really want to, I can usually talk someone out of trying to fight with me.					
6 If I refuse to fight, my friends will think I am afraid.					

Note: * Scale description: strongly disagree (1); strongly agree (5).

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